

**PROCEDURAL GUIDELINES
For
VIRGINIA'S WASTEWATER
REVOLVING LOAN FUND**

REVISED FEBRUARY 2004

TABLE OF CONTENTS

GENERAL OVERVIEW

Project Management	i
Planning and Design	ii
Construction	iii
Project Completion	iv

ALLOWABILITY OF EXPENSES

Section 1

Sizing	1-1
Pre-Loan	1-1
New Collection Sewer	1-1
Land and Easement Cost	1-2
Interest	1-2
Changes in Project Scope	1-2
Municipal Operating Expenses	1-2
Roadwork	1-2
Capacity for Federal or State Facilities	1-2

FUND DISBURSEMENT AND LOAN PAYMENT

Section 2

Disbursement of Funds	2-1
Reimbursement for Refinancing Efforts	2-2
Disbursement Scheduling	2-2
Loan Payment	2-3
Exhibit E	2-4

FINANCIAL MANAGEMENT

Section 3

Accounting Systems	3-2
Budgeting	3-2
Procurement Systems	3-2
Property Management Systems	3-2
Internal Controls	3-3
Audit Compliance	3-3

PROCUREMENT	Section 4
Methods of Procurement.....	4-1
Competitive Sealed Bids.....	4-1
Competitive Negotiation.....	4-2
Noncompetitive Negotiation.....	4-2
Small Purchases	4-2
Cost and Price Consideration.....	4-3
Reporting Requirements	4-3
 USE OF EQUIPMENT/PURCHASE OF MATERIALS	 Section 5
Prior Approval	5-1
Materials Purchased.....	5-1
Uses of Equipment.....	5-2
 FILING AND RECORD KEEPING	 Section 6
Filing and Record Keeping	6-1
Example Filing System.....	6-2
Detailed Contents for Record Keeping.....	6-3
 PRELIMINARY ENGINEERING AND ENVIRONMENTAL REVIEW	 Section 7
Categorical Exclusions from Environmental Assessment Requirement	7-1
Effluent Limits (Wastewater Treatment Works Only)	7-2
Current Wastewater Treatment and Collection Systems	7-2
Projected Future Wastewater Flows	7-3
Development and Evaluation of Alternatives.....	7-3
Environmental Assessment.....	7-3
Selected Alternative.....	7-5
 INILTRATION/INFLOW CERTFICIATION	 Section 8
Infiltration and Inflow (I/I)	8-1
I/I Analysis.....	8-2
Certification	8-3

AFFIRMATIVE ACTION AND

NONDISCRIMINATION PROVISIONS

Section 9

MBE/WBE Fair Share Objective.....	9-1
Contract Insert.....	9-1
Nondiscrimination Provisions.....	9-1

PRECONSTRUCTION CONFERENCE

Section 10

Attendees	10-1
Topics for Discussion	10-1
Follow up to Conference.....	10-2

STATE CONSTRUCTION OVERSIGHT

Section 11

Off-Site monitoring.....	11-1
Interim Project Evaluation (IPE)	11-1
Final Project Evaluation.....	11-2
Administrative Review	11-2

SEWER USE ORDINANCE

Section 12

Sewer Use Ordinance.....	12-1
Adoption and Submission to Regulatory Agency.....	12-1

PERFORMANCE CERTIFICATION

Section 13

Initiation of Operation	13-1
Project Performance Standards	13-1
Achieving Standards	13-2
Performance Certification.....	13-3

General Overview

Introduction

The Virginia Revolving Loan Fund (Fund) was established as a renewing source of low-interest loan funding for improvements to publicly-owned wastewater systems. Initially, funds are being provided through appropriations from both the federal and state governments. The Fund is separate, permanent, and perpetual with all principal and interest repaid into the Fund used to finance other projects. The State Water Control Board (SWCB) is responsible for developing the policies and procedures for the Fund, determining who will receive funds, at what interest rates and terms, and for ensuring that administration of the Fund complies with applicable federal and state policies, statutes, and regulations. The SWCB has delegated responsibility for management of the day-to-day operations of the Fund to its staff of the Department of Environmental Quality (DEQ). The Virginia Resources Authority (VRA) serves as the financial manager of the Fund and negotiates individual loans, makes disbursement to loan recipients, collects loan payments, and invests any uncommitted Fund monies.

To ensure compliance with program policies and requirements, DEQ offers assistance to loan recipients from the time of loan application to project completion and performance certification. The Loan Program Guidance Packages included in these Procedural Guidelines are intended as the first step of this assistance by providing the following information:

Virginia Revolving Loan Fund policies and procedures regarding allowable expenses and the flow of Fund monies.

Loan and construction management requirements and recommended methodologies for complying with these requirements.

DEQ activities related to assistance and program oversight throughout the project.

This general overview provides a summary of the activities involved in the planning, design, and construction of a Fund project including program requirements and recommendations for the successful completion of a project are discussed. Individual Loan Program Guidance Packages will be referenced for additional details on specific topics.

Project Management

Managing a successful wastewater construction project is a major undertaking. For many loan recipients, the project will be one of the largest (if not the largest) in which they have been involved. Good project planning and management is essential and will likely result in a successful construction project.

A key to good project management is to designate a project manager to represent the loan recipient in all loan and project-related activities. This person should be an employee of the loan recipient, available to deal with project matters, and given the necessary authority to oversee and coordinate all project activities. The project manager leads the project management "team" that provides the

administrative, technical, financial, and legal support for the project.

The size and structure of the project management team will depend on the size and complexity of the project, but the required functions are the same whether the project is small or large. These functions include:

Administration - Planning; application completion; organization; scheduling; record keeping; filing; procurement; change order processing; claims management; overall coordination and management.

Technical - Preparation of engineering documents; cost estimating; construction inspection and oversight; change order review; project start-up and O&M training; performance certification; overall technical support.

Financial - Identifying and arranging financing; budgeting; accounting and reporting; cash flow projection; processing receipts and disbursements; disbursement request preparation.

Legal - Contract development, review and interpretation; procurement review; negotiation; advice on land, easement, permit, and license and title acquisition; bond counsel; litigation; overall legal support.

The loan recipient should either have or acquire qualified staff to carry out these support functions. The administrative functions are typically carried out by the project manager, although the loan recipient may elect to delegate some duties to other employees. The technical functions are performed by the consulting engineering firm hired by the loan recipient, and this selection is extremely important to the success of the project. Financial functions may be partially assumed by the project manager, with certain financing and accounting duties carried out by other staff or contracted out to a professional accountant. Legal functions are normally carried out by a designated attorney on the staff of or retained by the loan recipient.

These procedural guidelines provide a number of Loan Program Guidance Packages (PG's) relating to project management. Essential elements in the management of a loan-funded project include an understanding of what costs are allowable under the loan program and how the project's cash flow will be handled. *Allowability of Expenses* (PG #1) and *Fund Disbursement and Loan Repayment* (PG #2) discuss these two topics. A Financial Management System for accountability of loan monies is discussed in PG #3. *Procurement* (PG #4) provides information regarding how goods and services involved in the project must be obtained in order to comply with program requirements and State law. *Filing and Record Keeping* (PG #6) discusses the objectives and recommended organization of those systems.

Planning and Design

The first step in a wastewater project is the development of a Preliminary Engineering Proposal (PEP) or planning document, discussed in *Preliminary Engineering and Environmental Review* (PG #7). This document is normally prepared by the consulting engineering firm hired by the loan recipient. To be eligible for funding, please note that procurement of professional engineering

services must be in accordance with the Virginia Public Procurement Act (PG #4). The PEP assesses the current situation, projects future needs, develops alternatives, assesses the environmental impact of the alternatives (for those projects not categorically excluded) along with the monetary costs, and presents a selected plan.

The planning phase of the project is extremely important because its goal is to set forth the most cost-effective, environmentally sound, and implementable project for the loan recipient. One of the most important requirements, detailed in PG #8, is the *Infiltration/Inflow Certification*. For projects involving treatment works, the DEQ Regional Office should be contacted early in the planning stage in order to ensure that effluent limitations are current and in place by a VPDES permit for the facility. The planning document should be reviewed and approved as outlined in PG #7 before the project moves into the design stage.

The design phase of the project, which involves the development of plans and specifications for the facilities to be constructed, is the next step. The Virginia Sewage Regulations (VSR) detail the State standards which must be met in the design. Close contact with the regional offices of the DEQ and particularly, the Virginia Department of Health (VDH), is helpful in reducing delays at this stage. A Preliminary Engineering Conference with both agencies is strongly recommended prior to full scale design, particularly for complex or large projects. In addition to VSR requirements, the specifications must include the Contract Inserts, and the Minority Business Enterprise/Women's Business Enterprise (MBE/WBE) goals, as discussed in PG #9.

Upon completion, the plans and specifications must be submitted to DEQ and VDH for review, comment, and final approval. The DEQ review will focus primarily on the bidding requirements and contract documents, and their conformance with program requirements. Otherwise, processing of the plans and specifications will proceed as outlined in the VSR, with ultimate issuance of a Certificate to Construct.

Construction

Upon issuance of the Certificate to Construct, and receipt of approval from the Construction Assistance Program, the loan recipient may proceed to advertise for bids for construction. The procurement requirements called for in the Virginia Public Procurement Act must be followed in procuring construction contracts (see PG #4). A pre-bid conference is recommended so that the engineer can present the project to bidders and answer any questions they may have. It is also recommended that the loan recipient select and begin discussions with their bond counsel at this time. Prior to the award of the contract, the loan recipient must submit to DEQ evidence of bid advertising, the bid tabulations, bid selection documentation, the bid bond, the low bid proposal, and adequate documentation of MBE/WBE solicitation/intended utilization. At this time, the final project budget should be finalized and presented to DEQ and VRA. Following satisfaction of all closing and program requirements, loan closing can occur.

Prior to construction, the project manager should plan and implement record keeping, filing (PG #6), and financial management systems (PG #3) for the project. The loan recipient should also provide a disbursement schedule to VRA and DEQ at this time. The project manager should ensure that all necessary permits have been obtained, that the contractor's bonding and insurance is in place, and

that all necessary land and easements are secured. These and other topics should be discussed in the *Preconstruction Conference* (PG #10) which should be held after contract award and prior to the beginning of construction. At the time of the Preconstruction Conference, DEQ staff will meet with the loan recipient to discuss project construction as it relates to the Fund.

During construction the loan recipient must provide for full time project inspection. Inspections, carried out by staff of the loan recipient's consulting engineering firm or hired directly by the loan recipient, will keep the loan recipient aware of construction progress, quality, and conformance with plans and specifications. Inspections are very valuable in claim resolution, change order negotiation and ensuring that payments are made for work-in-place. Inspections should be documented with reports that can be reviewed by DEQ during on-site monitoring. The loan recipient should also provide DEQ with the MBE/WBE report on a quarterly basis. DEQ will conduct on-site evaluations to assess project management and construction (*State Construction Oversight*-PG #11).

The loan recipient should submit fully supported disbursement requests, certified by the consulting engineer, to DEQ and make prompt payments to the construction contractor. The disbursement schedule should be updated to VRA and DEQ as needed.

The loan recipient should have an established and fully understood procedure to process change order requests from the contractor. The procedure should, at a minimum, involve submission of a fully supported change order proposal from the contractor; an independent estimate of the change order costs from the consulting engineer; a negotiation of a fair and reasonable price and time extension, as appropriate; a formal agreement to the contract changes; and notification to DEQ of the change orders. Change orders involving a significant modification to the design of the facility should be sent to the VDH and DEQ for approval, as required by the VSR. They will also be reviewed for loan eligibility during the on-site evaluations by DEQ

Project Completion

Prior to completion of the project, the loan recipient should complete and submit the Operation and Maintenance Manual to the VDH and DEQ for review and approval. The Sewer Use Ordinance (PG #12) must also be adopted by the loan recipient and submitted to DEQ for approval. Payments to the Fund will begin in accordance with the Financing Agreement.

As a final step before the construction contractor is released, the project manager should conduct a final walk through the facility with the consulting engineer, the contractor, and other key individuals to ensure that all work has been completed. Once the loan recipient and engineer are satisfied with the project's completion, they should submit the Statement of Completion of Construction referenced in the VSR and request a final inspection by DEQ (see PG #11).

The loan recipient must notify the DEQ of the initiation of operation as called for in *Performance Certification* (PG #13) and included in the financing agreement. The loan recipient, with the assistance of its consulting engineer, should then proceed to operate the facility in accordance with applicable state and federal permits. A training program should be maintained and performance should be closely monitored. After one year of operation, the loan recipient must submit a Performance Certification (see PG #13).

Loan Program Guidance Package

ALLOWABILITY OF EXPENSES

The program has been designed so that any cost determined to be reasonable and necessary in the planning, design and/or construction of needed wastewater improvements is allowed. Loan funds can be requested to cover most of the needed expenses for the loan recipient's approved wastewater system improvement program. DEQ may reduce loan eligibility and the scope and size of a project to insure the greatest financial benefit to as many communities as possible.

Sizing

It is extremely important that the proposed size and reserve capacity for both the treatment facility and interceptor system be supported and justified in the planning stage of the project. Sizing of a system and its appurtenances should be in conformance with established procedures as outlined in the Virginia Sewerage Regulations and with generally accepted engineering practices. Generally, the plant capacity should not exceed a 20-year design life and sewer system (*sewer lines, force mains and pump stations*) capacity should not exceed a 50-year design life. DEQ will reduce the amount of the loan authorized for any project proposing excessive and unjustified reserve capacity.

Pre-Loan

Loan allowability for expenses incurred on an approved project prior to the execution of a loan agreement are also eligible costs under the program provided they meet the following conditions:

The costs are necessary and attributable to the project approved for loan assistance.

The debt was incurred or construction began after March 7, 1985.

The costs are not attributable to or associated with the local share of a previously approved EPA construction grant project's eligible scope of work.

Procurement was carried out in conformance with the Virginia Public Procurement Act.

Prior expenditures will be considered on a case-by-case basis. The work performed or accomplished must be in conformance with the requirements governing the program or brought into compliance before it can be allowed.

New Collection Sewer

DEQ will evaluate loan allowability for new collector sewers on the basis of sewer needs as they relate to the elimination of public health hazards, ground water contamination and other factors related to water quality problems that exist due to the lack of central sewerage facilities in the area. Allowability will be limited to sewer lines including wyes and tees and line stubs for residential

connections. Allowability is limited to area determined to be maintained under municipal ownership. Service laterals from property boundary to structures remain ineligible under the program.

Land and Easement Cost

The purchases of land, easements and/or right-of-ways are not considered allowable costs under the Revolving Loan Program unless the land is considered an integral part of the treatment process. In addition, legal, administrative, and engineering expenses related to these purchases are also ineligible. Land purchases needed for spray irrigation, or other means of land application and disposal of wastewater and sludge would be considered an integral part of the treatment process and allowable for inclusion in the loan amount. The procurement of such land must be in conformance with the Federal Uniform Relocation and Real Property Acquisition Policies Act of 1970 (Uniform Act).

Interest

Any interest costs associated with funds borrowed for the planning, design, or construction of the project are ineligible for loan funding and will be disallowed.

Changes in Project Scope

Changes in the approved project scope by addendum to planning or design documents, change orders not attributable to the wastewater improvement project, or involving duplication of effort or work will be disallowed construction costs. Any cost or expenditure that is determined to be unnecessary and/or unreasonable will be disallowed.

Municipal Operating Expenses

Salaries and other expenses of salaried municipal employees are not allowable expenses for reimbursement under the program. In addition, the use of Force Account Labor is ineligible under the program.

Roadwork

Costs for roadwork will be limited to access roads necessary for and directly associated with access to the facilities and repair work directly associated with the installation of sewer lines.

Capacity for Federal or State Facilities

For sewage treatment and transport facilities that are sized to include significant capacity for Federal and State facilities, the Federal or State facilities may be required to finance their share of the costs of such facilities.

Loan Program Guidance Package

FUND DISBURSEMENT AND LOAN PAYMENT

Implementation of the Virginia Revolving Loan Fund (Fund) is a joint venture between the Department of Environmental Quality (DEQ) and the Virginia Resources Authority (VRA). A staff at DEQ receives the disbursement requests, conducts a review of the documentation, and forwards the requests to VRA. VRA is the administrator of the Fund and is responsible for making disbursements to loan recipients and collecting loan payments.

Disbursement of Funds

Following completion of the closing process and execution of the financing agreement between VRA and the loan recipient, the disbursement process can begin. The first disbursement of loan proceeds will be made at loan closing. The request can cover costs incurred prior to the loan agreement (such as planning, design, legal and administrative fees, etc.) as long as these costs have been identified previously as part of the approved project's scope-of-work. In addition to requiring that these costs be identified as part of the application or loan proposal, the Water Quality Act stipulates that all costs for the project must have been incurred on or after March 7, 1985 and cannot be part of a previous EPA grant. Loan eligibility cannot include the local share of a previous EPA planning, design, or construction grant. The loan, however, can cover modifications and/or redesign to a previous project with proper supporting documentation. Since this could be a potential problem area, the loan recipient should check with DEQ to determine eligibility prior to finalizing the loan agreement and requesting reimbursement.

Disbursement of loan proceeds is made on an actual cost basis. The costs must have been incurred prior to submitting the disbursement request. However, the costs may be paid prior to or after receipt of the loan funds by the locality. The request for disbursement is made using Exhibit E (Request for Disbursement) which is a part of the Financing Agreement. The request must also include Schedule 1 to Exhibit E (Schedule 1 to Accompany Requests for Disbursement) and the Certificate of the Consulting Engineer (*all documents attached*). The requests are directed to the DEQ's Construction Assistance Program at the following address with a copy sent to the Regional Engineer:

**Mr. Walter Gills
Construction Assistance Program
Water Division
Dept. of Environmental Quality
P. O. Box 10009
Richmond, VA 23240**

The request form must be supported by invoices and/or other documentation of costs incurred for the approved project. Other documentation includes verified copies of the contractor's payment request, invoices from the engineer and/or lawyer, equipment invoices, etc. Since the financing agreement is with the loan recipient, all disbursement requests must be executed by the loan recipient. Likewise, all disbursements will be made payable to the loan recipient.

The DEQ will forward all valid (supported) disbursement requests to VRA within 3 working days of receipt. The request will be honored by VRA within 5 days of receipt from the DEQ. **Any incomplete or invalid requests cannot be honored on the 3-day basis.** Requests should be calculated on the basis of invoiced or incurred cost less any contractual or specified payment retainage, unless retainage is escrowed.

The loan recipient will receive a disbursement at loan closing for project costs incurred up to that time. This can only be accomplished if a valid disbursement request is submitted to DEQ **at least two weeks prior to the loan closing date.**

The loan recipient should review its internal payment procedures to accommodate this reimbursement procedure. It is recommended that the procedures allow for payment to the contractor within 30 days from receipt of the contractor's pay request unless other timeframes are designated in the specifications. For example, an invoice received by the 1st of the month could be paid on the 30th of the month. Assuming timely submission on the part of the loan recipient, this procedure should allow for documentation of all costs incurred, enable the DEQ to concur with the validity of the request, and permit prompt disbursement by the VRA. The purpose of this procedure is to minimize or eliminate the extent to which the loan recipient has to support the payment up front prior to reimbursement.

It is important to note that disbursements will be held to the 95% level (95% of the total loan amount) until the sewer use ordinance and O&M manual are approved by DEQ. Therefore, the loan recipient should ensure that these documents are submitted in a timely manner.

Reimbursement for Refinancing Efforts

Disbursement procedures may differ somewhat for approved projects involving a refinancing effort as these would normally involve a one time disbursement request for all eligible costs incurred during previous construction. DEQ will need to review the loan recipient's financial and project records prior to approving and authorizing disbursement. Since this may involve an on-site review, approximately 45 days should be allowed for this type of reimbursement.

Disbursement Scheduling

The disbursement schedule should be updated periodically by the loan recipient. Updates

would occur after award of the construction contract to incorporate the contractor's anticipated requests to the recipient. Changes to the project's completion schedule would also necessitate an update.

Loan Payment

Payment on a loan must be made at least annually, beginning no later than one year after completion of construction. Thus, loan payments will begin within the year following the completion of construction activities as specified in the refinancing agreement, or as negotiated based on the loan recipient's anticipated revenue flow. Loan payment for a project being refinanced through the Fund should begin within 30 days following VRA disbursement.

Please contact Darrell Hill or Walter Gills regarding any information on disbursement of loan proceeds or payment of loan monies.

**Mr. Darrell Hill
Virginia Resources Authority
707 East Main Street
P.O. Box 1315
Richmond, Virginia 23219

Telephone (804) 644-3100**

**Mr. Walter Gills
Construction Assistance Program
Department of Environmental Quality
P.O. Box 10009
Richmond, Virginia 23240

Telephone (804) 698-4133**

EXHIBIT E

REQUISITION FOR DISBURSEMENT

(To Be on Borrower's letterhead)

[Date]

Mr. Walter Gills, Program Manager - Construction Assistance Program
Department of Environmental Quality
P. O. Box 10009
Richmond, VA 23240-0009

Re: **Virginia Water Facilities Revolving Fund**
[Name of Borrower]
C-515___-0__

Dear Mr. Gills:

This requisition, Number ___, is submitted in connection with the Financing Agreement, dated as of ___, 19___ (the "Financing Agreement") between the Virginia Water Facilities Revolving Loan Fund, also known as the Virginia Revolving Loan Fund (the "Fund") and the [Name of Borrower] (the "Borrower"). Unless otherwise defined in this requisition, all capitalized terms used herein shall have the meaning set forth in Article I of the Financing Agreement. The undersigned Authorized Representative of the Borrower hereby requests disbursement of loan proceeds under the Financing Agreement in the amount of \$ ___, for the purposes of payment of the Project Costs as set forth on Schedule I attached hereto.

Attached hereto are invoices relating to the items for which payment is requested.

The undersigned certifies that (a) the amount requested by this requisition will be applied solely and exclusively to the payment, or the reimbursement of the Borrower for the payment, of Project Costs, and (b) any materials, supplies or equipment covered by this requisition are not subject to any lien or security interest or such lien or security interest will be released upon payment of the requisition.

This requisition includes an accompanying Certificate of the Consulting Engineer as to the performance of the work.

Sincerely,

(Authorized Representative of the Borrower)

Attachments

cc: Mr. Darrell Hill – VRA (without attachments)
DEQ Regional Engineer (with all attachments)

3

Loan Program Guidance Package

FINANCIAL MANAGEMENT

It is essential that all recipients under the **Virginia Revolving Loan Fund (Fund)** maintain a financial management/control system for complete accountability of loan monies. An accountability system requires:

- 1) *the overall ability to track and control loan activities*
- 2) *a sound accounting system*
- 3) *good internal controls*
- 4) *compliance with all applicable guidelines*
- 5) *proper procurement procedures.*

This guidance is designed to assist the loan recipient in reviewing existing capabilities and to provide some procedures/guidelines to ensure an adequate accounting system.

The **Virginia Public Procurement Act** provides the legal basis by which all procurements are to be made in the Commonwealth including procurement for professional services, nonprofessional services, construction, equipment and supplies.

The **Uniform Financial Report Manual** issued by the Virginia Auditor of Public Accounts pursuant to Section 15.1-66, **Code of Virginia (1950)**, establishes accounting principles and requirements that must be followed by Virginia loan recipients.

Guidelines for property management, budget requirements and audit requirements are included in the **Office of Management and Budget Circular A-102**, Uniform Requirements for Assistance to State and Local Governments and Office of Management and Budget; **Circular A-128, Single Audit Act.**

The financial management function is comprised of various parts that must be carried out in an effective, coordinated manner to achieve goals and produce results in a timely and efficient manner.

By accepting the loan, the recipient accepts responsibility for controlling the funds it will receive. Commonly accepted standards for an adequate financial management system provide for accurate and complete reporting of finances in accordance with state

accounting and reporting requirements. Records that identify the source and application of funds pertaining to awards, obligations, assets, liabilities, outlays, and income should be maintained. Effective control over and accountability for all funds, property, and other assets in the form of audits must be established. Further, a systematic method to assure timely and appropriate resolution of audit findings and recommendations must be in place.

Accounting Systems

According to the **Uniform Financial Reporting Manual**, all Virginia loan recipients are required to comply with **Generally Accepted Accounting Principles (GAAP)** which mandate that government resources shall be organized and accounted for on a fund basis.

The accounting system itself should be double entry. A general ledger supported by a cash receipts journal, a cash disbursement journal, a journal voucher or general journal, and a fixed assets ledger comprise the minimum requirements. Other ledgers the loan recipient should keep include accounts receivable and accounts payable ledgers, as well as budget/expenditures control and cash control subsidiary ledgers.

Budgeting

The budget is the document by which projected resources are allocated on the basis of need. Budgets also provide a source of control for ensuring that resources are not overspent. The use of a subsidiary budget/expenditure ledger as the basis of comparison and control is an accepted method. Expenditures and encumbrances should be posted in such a manner as to reflect the unencumbered balance available for expenditure.

Procurement Systems

In general, the objectives of a procurement system are to promote to the maximum extent possible free and open competition, and to insure that the loan recipient is receiving the required product at the best price. The system should also be structured to avoid unnecessary expenditures and to provide written guidelines for purchases made by the loan recipient. Provisions to promote maximum usage of minority- and female-owned businesses must also be incorporated in the loan recipient's procurement process.

The Public Procurement Act sets forth the guidelines for the procurement of goods and services in the state. The loan recipient should establish a written set of procedures that detail how procurements will be made and by whom.

Specific procurement information and guidance is provided in Program Guidance #4.

Property Management Systems

The property management system should provide records which include a description of

the property, date acquired, title rights (if applicable), source, labeling or identification codes (serial number, model), cost or value of the item, and the vendor from which it was purchased for all nonexpendable items. The recipient should make inventories periodically. Any differences between physical and book inventories should be immediately reviewed and reconciled.

Internal Controls

Internal control is the means by which the recipient's accounting, procurement, and other management systems are regulated. It serves to assure management that proper procedures are followed with respect to all project operations, including receipt and disbursement of public funds. Internal controls should include segregation and rotation of duties among employees so that one person does not have complete control over all phases of any transaction. Yearly audits should be made at the recipient's initiative, and systematic methods established to assure timely and appropriate resolution of audit findings and recommendations. All assets and records should be properly protected through the use of appropriate security measures.

Audit Compliance

The recipient must comply with the **Single Audit Act (SAA)** by contracting for audits that are in compliance with the **SAA** and establishing methods for the timely resolution of audit findings.

4 Loan Program Guidance Package

PROCUREMENT

The recipient's procurement system must be structured to promote free and open competition to the maximum extent possible. It is the loan recipient's responsibility to ensure that it receives the required product at the best price and to avoid all unnecessary purchases and expenditures. The loan recipient's procurement procedures should also promote, to the maximum extent possible, the use of minority and female-owned businesses.

All procurement made during the course of planning, design and construction of the loan project must be purchased, acquired or contracted for in accordance with **Chapter 7, Title 11, Code of Virginia**, and known as the **Virginia Public Procurement Act (Act)**.

This program requires all participants to follow the provisions of the Virginia Public Procurement Act as revised by the 1993 General Assembly Session **with no exceptions recognized for localities under 3,500 in population**.

Methods of Procurement

Competitive sealed bidding or competitive negotiation may be used for the purchase or lease of goods, services, construction, etc., under public contract. Professional services may be procured by competitive negotiation. Competitive negotiation may be used for procurement of other than professional services when it has been determined, and documented in writing, that competitive sealed bidding is not practical or advantageous to the public. The procedures for these and other allowable procurement methods are discussed below.

Competitive Sealed Bids

Procurement under this method includes the following procedures or steps. A formal public announcement is made that sealed bids will be received for the specified work, or a solicitation for bids is placed in newspapers and publications with wide distribution. The announcement should be published at least 30 days prior to the bid opening so that the project receives maximum exposure to potential contractors.

All bids must be opened at the same time and all non-responsive bids should be rejected immediately. A responsive bidder is one whose bid has followed all requirements of the bidding document specifications. Bids are then evaluated in accordance with criteria established by the recipient in the bid document to determine the lowest, responsive, responsible bidder. A responsible bidder is one who has the financial and technical

resources to perform the scope-of-work. Further, a responsible bidder has a satisfactory performance record, is willing to comply with federal labor requirements and standards, and has an adequate accounting system to document compliance.

Once the bids and bidders have been evaluated and the lowest, responsive, responsible contractor has been determined, the contract can be awarded. Award of the contract will also follow the method described in the contract documents. Award of the contract cannot be made to a contractor who has been debarred and/or suspended from bidding on any federal or state funded project.

Competitive Negotiation

Procedures for this type of procurement require posting of a public notice and an advertisement in a newspaper of general circulation. The notice and advertisement must identify the needed services and request that proposals be submitted. It should be published so that it receives wide circulation and appears at least 30 days prior to the deadline for receiving proposals. The notice will include the scope of services; the method by which documents associated with the services can be obtained or examined; the criteria to be used to evaluate each proposal; and the deadline and place for submitting the proposals.

Once the proposals are received, they are to be evaluated uniformly in accordance with criteria established in the notice to determine the qualified offerors and acceptable proposals. The recipient then determines the list of the best-qualified firms, and negotiations with these firms begin. Negotiations are to be conducted in a manner that does not identify or disclose any information regarding competing firms. Once a proposal is determined to be the most advantageous to the recipient, considering price and evaluation criteria, the contract can be awarded.

Noncompetitive Negotiation

Award of a contract or subagreement under noncompetitive negotiation methods may occur only when an item is available from a single source, a public emergency exists requiring immediate action, or after solicitation from a number of sources, competition is determined to be inadequate. Authorization from DEQ must be obtained for procurement through noncompetitive negotiation. A written determination shall document the availability of only the sole source or emergency situation.

Small Purchases

The Act allows small purchases (those which total under \$50,000) to be procured without the formal procedures associated with the competitive sealed bidding and/or competitive negotiation methods. When these instances arise, the recipient should contact several (preferably three or more) suppliers and obtain written or telephone price quotations to make the most advantageous selection. A written small purchase procedure or the Virginia Public Procurement Act must be followed for purchases under \$50,000.

Documentation of the procedures followed in small purchases procurement must be kept by the recipient.

Cost and Price Consideration

In competitive negotiation, cost is one of the evaluation factors used in the selection process. Detailed cost data should be obtained from the firms involved in the negotiation process. Pricing should be evaluated based on the complexity of the work and the prices charged in the surrounding geographical area.

The two types of costing/pricing which are typically preferred for service type contracts are *Fixed Price* or *Lump Sum*, and *Cost Plus Fixed Fee*. The fixed price arrangements are used when the scope-of-work can be clearly defined and a fixed price or lump sum cost can be negotiated. Under this type of subagreement, the final cost cannot be changed unless a formal change in the scope of the work is negotiated.

The cost plus fixed fee pricing arrangement is used when it is difficult to define accurately the complete scope-of-work. Under this type of subagreement, a cost ceiling or upper limit is established along with a fixed fee or profit for the work. If costs increase for additional work within the original scope-of-work, the contractor does not receive any increase in the fixed fee.

The acceptable methods of obtaining the cost for construction services are "Unit Price" bids and "Lump Sum" bids. In lump sum bidding, the entire scope-of- work is grouped together as a single item and the contractor provides a price that will accomplish the entire scope. In unit price bidding, each individual task or item is broken out by linear feet, cubic yards, etc., and a cost is given per unit specified, along with the total cost of all units required for the task identified.

Reporting Requirements

Prior to the award of construction contracts, the recipient will be able to determine if an increase or decrease is needed for the loan commitment to reflect the actual project costs. The recipient shall provide DEQ with copies of the following information and documents:

The updated or "as-bid" costs for all tasks/elements involved with the project. This budgeting summary should include, and break out individually, the construction cost, equipment cost, fees for inspection and engineering services, etc., which will require outlay during the construction of the project.

Evidence of bid advertisement.

The Bid Form(s) or Bid Proposal(s).

The Bid Tabulation(s).

Anticipated construction start date.

MBE/WBE solicitation information

All bonds (*bid, payment, and performance*).

For procurement of professional services other than construction contracts, (*i.e., architectural/engineering*) the recipient will be expected to supply DEQ with the following information.

Proof of date RFP or RFQ was issued (copy of advertisement)

Copy of executed contract

Copy of evaluation criteria used

Ranking of respondents

Statement detailing with whom negotiations were conducted

All documentation and support information concerning the procurement of service and goods shall be retained in the recipient's project files and will be available for inspection by DEQ, VRA, or their authorized agent.

5

Loan Program Guidance Package

FORCE ACCOUNT WORK USE OF EQUIPMENT/PURCHASE OF MATERIALS

The Department of Environmental Quality encourages the use of competitive procurement methods in all phases of projects funded through the Virginia Revolving Loan Fund. In some cases, the loan recipient may wish to pursue the accomplishment of portions of the project through the use of their own municipal equipment and personnel. **Personnel costs are NOT eligible costs and cannot be reimbursed.** However, costs associated with equipment usage and purchase of materials are eligible if the loan recipient complies with the following guidelines.

Prior Approval

The loan recipient **MUST** request and receive DEQ approval of any material purchases and equipment usage **PRIOR** to the purchase and/or performance of the work. When requesting prior approval, the following information is required:

1. Specific information clearly describing the nature and scope of the proposed work.
2. Discussion of the reason for using force account in lieu of competitive bidding, including information comparing force account costs versus costs reasonably expected for the same work under competitive procurement methods.
3. Documentation verifying that existing municipal employees and/or equipment is of sufficient number and qualification to perform the proposed work. (i.e. details of similar work previously performed, special skills of employees, etc.).
4. A list of all materials to be purchased.
5. A list of all equipment to be used and rates to be charged. The rates must not be higher than rates established by the Virginia Department of Transportation.

Materials Purchased

All materials must be procured in accordance with the Virginia Public Procurement Act. Adequate documentation to establish compliance with proper procurement and MBE/WBE solicitation, where applicable, will be required prior to reimbursement. In certain instances, DEQ may require submission and approval of specifications relative to material purchases. Necessity for submission of specifications will be decided on a case-by-case basis.

Uses of Equipment

Equipment owned by the loan recipient and used on VRLF projects can be reimbursed on the basis of the actual hours used times the accepted hourly rate. The hourly rate cannot exceed the rates established by the Virginia Department of Transportation.

Rental/leased equipment should only be used when equipment owned by the municipality is not available. Proper procurement procedures, as discussed in PG #4, must be followed when equipment is rented/leased.

Verified time records for equipment usage and material invoices with substantiating documentation must be submitted with the loan recipient's reimbursement request.

6

Loan Program Guidance Package

FILING AND RECORD KEEPING

Adequate filing and record keeping systems are essential for ensuring project accountability, proper coordination and overall project management. Further, these systems will provide the support documentation needed during final close out and audit. The complexity of the recipient's individual filing and record keeping systems will depend on the project. Implementation of the record keeping and filing systems should begin with the receipt of this package and include any prior documentation and information related to the project.

The main objectives of good record keeping and filing systems are to provide documentation and organization. Written accounts of all transactions, meetings, negotiations, procurements, agreements, construction activities, and telephone conversations should be maintained. Files should be complete, logically arranged, readily accessible, protected from fire, theft and other potential damage, and clearly distinguished from other files. The records and files should be arranged according to topical area (*i.e., planning, design, construction, project management*) of the project and labeled or coded in a manner to clearly identify each specific topic. A master index or mini- tracking system should also be developed to provide easy reference for items associated with various topics.

The recipient must maintain all records pertinent to the loan project for a period of three years unless:

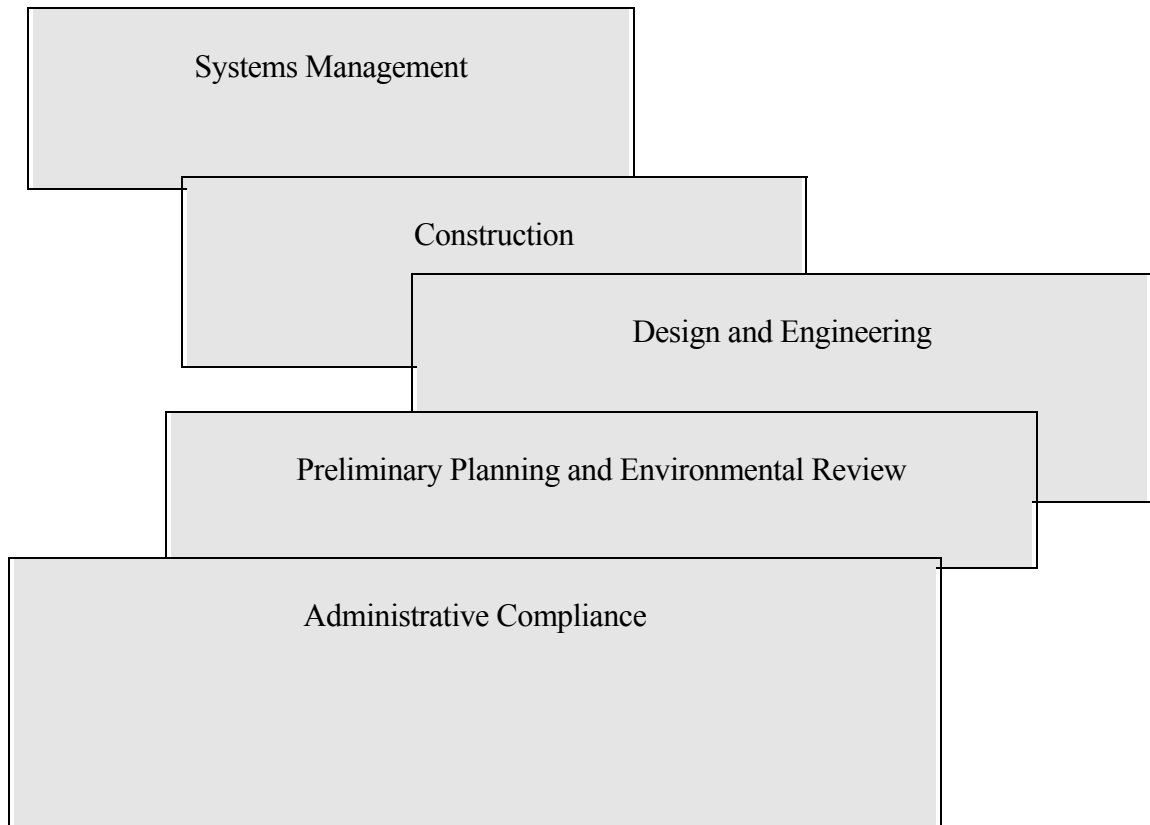
Any litigation is started before the end of the three-year period, and then all records shall be retained until completion or resolution of any litigation or claim.

The records are for nonexpendable property and those must be retained for three years after its final disposition.

The three-year period shall begin at the acceptance of the final audit or the resolution of any audit findings, whichever is the last to occur.

A sample filing system which may be of assistance in organizing the project files is attached.

Example Filing System



MAJOR HEADINGS

- I. Administrative Compliance**
- II. Preliminary Planning and Environmental Review**
- III. Design and Engineering**
- IV. Construction**
- V. Systems Management**

System should accommodate the information that would be contained under the headings referenced above and more detailed subheadings and elements listed on the next page.

Detailed Contents for Record Keeping

I. Administrative Compliance

A. Program Design Manual

B. Procedural Guidelines

C. Loan application

D. Loan agreement and loan conditions

E. Miscellaneous administrative information

F. General correspondence

G. Financial management

1- Narrative of accounting procedures

2- Assignment of duties

3- Procurement procedures, small purchase procedure

4- Budget

5- Procurements; advertising for bids, awards, etc.

6- Request for payment projected schedule

7- Payment request log

a) general ledger

b) cash receipts journal

c) cash disbursements journal

d) fixed assets ledger

e) subsidiary ledgers: accounts receivable, accounts payable, budget/expenditure control, cash control

8- Invoices, pay estimates, administrative expenses

9- Equipment use time sheets

10- Audit reports; method of procurement of auditors; certification of compliance with A-128

11- Compliance with Civil Rights Act of 1964 (Form 4700-4)

H. Land Acquisition Process

II. Preliminary Planning and Environmental Review

A. Professional service contracts and amendments

- B. PEP**
- C. Environmental Assessment**
- D. Public participation; public hearings**
- E. State/Federal review comments**
- F. State Environmental Review**
- G. General correspondence**
- H. State approvals**

III. Design and Engineering

- A. Professional service contracts and amendments**
- B. Plans and specifications, addenda**
- C. Approvals**
- D. General correspondence**

IV. Construction

- A. Bid tabulations; bid bonds; performance bonds; notices of award; notices to proceed**
- B. Construction contracts**
- C. Listing of subcontractors**
- D. Construction permits, construction schedules, photos**
- E. Right-of-way; easements acquired**
- F. Change orders with back up, approvals**
- G. Inspection reports**
- H. Test reports, material certification**

I. Shop drawings

J. Civil rights compliance certifications

K. MBE/WBE goals and affirmative action

V. Systems Management

A. VPDES permit

B. User charge system

C. Sewer use ordinance

D. O&M Manual

E. Other permits, insurance policies, performance certification

7

Loan Program Guidance Package

PRELIMINARY ENGINEERING AND ENVIRONMENTAL REVIEW

The Virginia Wastewater Revolving Loan Fund (Fund) Program Design Manuals identifies a number of requirements applicable to all projects receiving loan assistance under the program. Some of the requirements are applicable to the planning stage of a project. The applicable planning requirements are as follows:

1. Environmental Review
(*similar to National Environmental Policy Act (NEPA) reviews*)
2. Cost-effectiveness Analysis (including infiltration/inflow)

The most appropriate and efficient vehicle for satisfying the above-mentioned planning requirements is the Preliminary Engineering Proposal (PEP) required by the Virginia Sewerage Regulations (VSR). Thus, planning requirements can be satisfied through one document and the most cost-effective, environmentally sound, and implementable project can be identified.

In addition to the State's PEP planning process (for projects not categorically excluded), an environmental assessment on the alternative selected must be performed and subjected to an environmental clearance process prior to design and construction of the facility. The complexity and level of detail required in preparing the PEP will vary with local circumstances, the size and nature of needed facilities, and the extent of previous planning efforts.

Categorical Exclusions from Environmental Assessment Requirement

Loan recipients may request an exclusion from the environmental assessment requirement if the loan project meets the following conditions as applicable to that project:

1. An upgrade in level of treatment of an existing treatment works on the existing site of the works.
2. An expansion of an existing treatment works on the existing site of the works which would result in no more than a 25% increase to the existing service population.
3. Sewer rehabilitation or separation in order to correct infiltration/inflow or combined sewer overflow problems, which does not include significant

sewer relocation or a significant increase in sewer capacity.

4. Replacement of existing equipment or structures at their present location.
5. Installation of on-site treatment technologies (individual or cluster septic tank/drainfields, mound systems, sand filters, etc.).
6. Minor extensions of water or sewer lines which will be located within road right-of-ways or otherwise previously disturbed areas.

The exclusion request should be transmitted to DEQ and should include a description of the project, a discussion of how the project meets one or more of the exclusion conditions and support documentation. DEQ will review the project and issue a Categorical Exclusion, if appropriate. The loan recipient must then public notice the CE in a local newspaper. For localities anticipating request of a categorical exclusion, contact with DEQ staff is recommended early in the planning process to receive preliminary indication of acceptability. This may reduce project delays resulting from DEQ non-concurrence.

Effluent Limits (Wastewater Treatment Works Only)

For projects involving treatment works, the first step in the planning process is the identification of effluent limitations. Effluent limitations are established by the VPDES Permit issued by DEQ. Application forms can be obtained from DEQ Regional Offices.

Current Wastewater Treatment and Collection Systems

Existing wastewater treatment and collection systems should be identified, noting existing service areas, treatment plants, and sludge disposal methods. Information on existing wastewater flows and loading, including average and peak flows, dry and wet weather flows, combined sewer overflows, and the location, frequency, and volume of bypasses should be included. Available data on industrial and commercial flow should be summarized. The overall performance and integrity of the existing wastewater treatment facilities should be evaluated. Where relevant, this section should include a discussion of the documented cases of public health problems and/or groundwater contamination related to inadequate wastewater systems.

A key and required element in the analysis is an evaluation of infiltration/inflow (I/I) into the existing system. The loan recipient must demonstrate, and DEQ must certify, that sewer systems entering the proposed treatment works project are not or will not be subject to excessive I/I. DEQ I/I certification procedures are outlined in Loan Program Guidance Package #8.

Projected Future Wastewater Flows

Future wastewater flows and loads for the service area should be projected. The planning period should, at a minimum, be 20 years beyond the date the facilities are scheduled to

begin operation. While the planning period may extend beyond 20 years, loan assistance will generally be limited to 20-year design life for treatment works and 50-year design life for sewers.

The following factors, along with current flows described earlier, should be considered when estimating future wastewater flows and loads for the area. First, current projections of economic and population growth for the planning period, and flows and loads per unit as described in the VSR should be taken into account. The magnitude of I/I should also be assessed. Finally, future changes in flows and wasteloads from industries to be sewered by the treatment works should be projected, as well as the effect of pretreatment requirements.

Development and Evaluation of Alternatives

The development and evaluation of alternative wastewater treatment works, processes, and/or techniques capable of meeting the applicable effluent, water quality, or public health goals of the project must be presented. The primary objective of this evaluation is to identify and select the most cost-effective solution for wastewater and sludge management for the planning area. The evaluation should include the present worth value of the estimated capital and operation/maintenance costs for the alternatives presented over the planning period.

The alternative of optimizing performance of existing facilities should be considered first and the use of innovative and alternative technologies as well as conventional technologies should be addressed. Innovative/alternative technologies should be evaluated for the opportunities they present in terms of capital and/or operational cost savings, more efficient use or recovery of energy, and the reclamation and reuse of wastewater and sludge constituents.

Environmental Assessment

The environmental assessment must address and consider both the direct and indirect environmental impacts of the selected alternatives. Accordingly, both adverse and beneficial impacts need to be identified and considered. Direct impacts are caused by the construction of the treatment works, and indirect impacts are caused by the development made possible by the project. The assessment must also evaluate and discuss the impacts that would result without the project (a take-no-action alternative).

The following is a list of environmental concerns and effects, which must be addressed through an environmental assessment of the alternatives being considered. Any adverse affect should be identified as short term or long term (short term means while under construction), and any protective measures to reduce or eliminate their impact should also be identified.

1. Effects, destruction and/or displacement of wildlife and marine life, including endangered species, and their habitats, or foodchain.
2. Destruction or disturbance of marshland or wetlands.
3. Displacement of households, businesses, or services.
4. Possible destruction of surrounding farm land or the loss of open space land.
5. Effects on land having archeological significance.
6. Destruction or disturbance of areas of historical significance.
7. Use of irretrievable resources.
8. Noise.
9. Traffic circulation and traffic pattern disruption.
10. Odor/air quality.
11. Damage and/or pollution of surface water resulting from erosion, discharges or other sources.
12. Aesthetic concerns and visual impacts.
13. Any disturbance to designated wild, scenic and/or recreational river use.
14. Socio-economic changes.
15. Floodplain impacts

The impacts of the selected alternative should be summarized. Particular attention should be paid to unavoidable adverse impacts resulting from the project, and the relationship between short-term impacts on the environment and long-term maintenance and enhancement of environmental quality. This section should also include, as appropriate, the steps that will be taken to avoid or minimize the adverse impacts, as well as structural and nonstructural methods of mitigating unavoidable impacts.

Selected Alternative

In determining the selected alternative, several factors need to be considered. The project cost is obviously an important consideration; however, the environmental impacts of the

alternatives must also be taken into consideration. The relative costs must be weighed against the relative impacts. Projects with essentially equal environmental impacts will normally be selected solely on the basis of costs. However, a more costly alternative may be the best selection if it is more environmentally sound than a less costly alternative. Once the most cost-effective and environmentally acceptable alternative has been selected, more detailed information should be presented. This information should include:

A schematic diagram of the selected plan, with unit process design parameters and sizes.

A description of project financing and the cost impacts on the wastewater system users.

A projected implementation schedule, including major milestones, for completion of the project.

Once the loan recipient has prepared the PEP, it must be approved by DEQ; the procedures are as follows:

1. The PEP should be forwarded to DEQ and Virginia Department of Health (VDH) as required by the VSR. A Preliminary Engineering Conference may be appropriate at this time.

2. If the loan recipient feels it is eligible for a categorical exclusion from the environmental assessment, they should submit the request, with appropriate documentation, to DEQ as discussed earlier. If DEQ concurs with the request, then the concurrence will be transmitted to the loan recipient for local public notification for a 30-day comment period. If there are no significant adverse public comments, DEQ will issue an environmental clearance letter and the PEP may proceed to Step #8 below. If DEQ does not concur with the request, or significant adverse public comment is received as a result of the notification, then the PEP must proceed through Steps #3-8.

3. The Environmental Assessment, including a project description and site location map, must also be forwarded to all review agencies for review and comment. A list of these agencies is attached. The agencies must be given 30 days for review and comment. The recipient must retain copies of the transmittal letters as well as all review comments received.

4. The loan recipient must hold a public hearing for the purpose of discussing the project, alternatives considered, environmental impact, project costs, and associated user charge impact. The public hearing must not be held until after the end of the 30-day agency review referenced in #3 above. Public notice must be made at least 30 days prior to the hearing and must be published by the recipient at least once per week for

two consecutive weeks in a newspaper of general circulation in the service area involved in the project. The PEP and Environmental Assessment must be made available for public review prior to the hearing. A record of the hearing proceedings shall be kept.

5. The loan recipient must provide DEQ with a copy of the transmittal letters and all comments received from the appropriate agencies as well as the notice of the public hearing and the public hearing record. The comments provided must be addressed, with any project changes made as deemed appropriate, based on environmental effects, monetary and other resource costs, and overall feasibility and reliability.

6. DEQ will review the submittal from the loan recipient and determine whether a Statement of Environmental Review (SER) should be issued. If the environmental assessment indicates that a significant environmental impact may occur and that the impact cannot be mitigated through changes in the project, then an Environmental Impact Statement must be prepared. Steps for preparing an Environmental Impact Statement are outlined in the DEQ's Standard Operating Procedures Manual and will be provided to the loan recipient once an EIS determination is made. Otherwise, the DEQ will prepare and issue the SER.

7. The SER will be forwarded to the loan recipient for publishing locally and in an appropriate newspaper of general circulation in the area in which the project is to be built. The SER must be noticed for a period of 30 days. DEQ must be provided with a Public Notice Verification Sheet signed by the newspaper in which the notice was published. If no significant adverse comments are received from the public, DEQ will issue a clearance letter completing the environmental review.

8. DEQ will review any comments provided (as well as the approval provided by the VDH in accordance with the VSR), and approve the PEP, if appropriate.

ENVIRONMENTAL REVIEW AGENCIES

Mr. Earl Robb, Division Administrator
Environmental Division
Resources
Department of Transportation
1401 East Broad Street
Memorial Hospital Building
Richmond, Virginia 23219
Attention: Mary Stanley
804/ 786-0868

Mr. Robert W. Grabb, Chief
Habitat Management Division
Virginia Marine Resources Commission
P. O. Box 756
Newport News, Virginia 23607-0756
757/ 247-2250

Local Wetlands Boards: To obtain the address
And telephone number of the Local Wetlands
Board, call Beth Howell at the Virginia Marine
Newport News, Virginia 23607-0756
Resources Commission:
757/ 247-2252

Mr. Ray Fernald, Manager
Environmental Services
Resources Commission:
Department of Game and Inland Fisheries
P. O. Box 11104
4010 West Broad Street
Richmond, Virginia 23230-1104
Attention: Amy Martin or Andrew Zadnik
Amy: 804/ 367-2211
Andrew: 804/ 367-2733

Mrs. Ethel Eton, Manager
Department of Historic Resources
2801 Kensington Avenue
Richmond, Virginia 23221
804/ 367-2323 x112

**NOTE: the Project Review Application Form
is not required, but helpful and can be found at:**
www.dhr.virginia.gov/review/sect_106_form.htm

**Information regarding the required search of the
archives and any associated cost can be found at:**
www.dhr.virginia.gov/archives/archiv_searches.htm

Mr. John Davy, Jr., Division Director
Division of Planning and Recreation

Department of Conservation and Recreation
203 Governor Street, Suite 326
Richmond, Virginia 23219
(NOTE: Send 3 Complete Copies)
Attention: Scott Bedwell
804/ 371-2594

Mr. Bob Hume, Regulatory Branch Chief
Army Corps of Engineers
803 Front Street
Norfolk, Virginia 23510
757/ 201-7657

Keith Tignor
Office of Policy, Planning & Agricultural
Development
Dept. of Agriculture & Consumer Services
P. O. Box 1163
Richmond, Virginia 23219
804/ 786-5175
cc: Commissioner, Dept. of Agriculture
& Consumer Services

IMPORTANT NOTE:

**An additional 5 complete copies must be
sent to the project's DEQ Regional
Engineer at the address shown under the
VCWRLF Contacts link**

Loan Program Guidance Package

INFILTRATION / INFLOW CERTIFICATION

Loan recipients must show that sewer systems entering their wastewater treatment works are not or will not be subject to excessive infiltration/inflow (I/I). This demonstration of Non-Excessive I/I must be provided by loan recipients prior to loan award for all Virginia Revolving Loan Fund (Fund) projects involving treatment works. It will normally be presented as part of the Preliminary Engineering Proposal (See PG #7). Based on the information presented, the Department of Environmental Quality (DEQ) must then provide a Certification of Non-Excessive I/I. The purpose of the evaluation and certification process is to assure that the most cost-effective approach is selected for meeting the community's wastewater needs and that the project is capable of meeting project performance standards.

Infiltration and Inflow (I/I)

Infiltration is water that enters a sewer system from the ground through such means as defective pipes, pipe joints and manholes. Infiltration occurs during periods of saturated soils and high ground water. *Inflow* is water discharging into a sewer system through sources such as roof leaders, cellar and area drains, manhole covers, cross connections between storm and sanitary sewers, catch basins, cooling towers, etc. Inflow occurs during and immediately after precipitation events. Because inflow sources are generally easier to find and more accessible, the inflow component of I/I can usually be removed more easily and economically than can infiltration.

The extraneous water from I/I sources reduces the capability of sewer systems and treatment facilities to transport and treat domestic and industrial wastewater. High flows induced by I/I overload sewer systems and treatment facilities and may result in:

Bypasses and/or overflows of untreated sewage to surface water that result in degradation of water quality and may endanger public health.

Reduction in treatment detention time that causes violations of VPDES permit limitations.

Washout of biomass in the treatment facilities that greatly reduces treatment efficiency and causes prolonged periods of permit noncompliance.

Additional costs to the community through increased pumping, chemicals, and other operational expenses.

There are two basic methods for dealing with I/I: **elimination** and **transport/treatment**.

Elimination involves sewer line and manhole rehabilitation and replacement, as well as the disconnection or correction of inflow sources. The elimination of I/I can often substantially reduce the cost of wastewater collection and treatment. However, some I/I elimination techniques, in certain situations, may actually be more expensive than the cost of transport and treatment. Therefore, a logical and systematic evaluation of the sewer system is necessary to determine the most cost-effective means of handling I/I.

For purposes of certification, **excessive I/I** is that quantity of I/I which can be more cost-effectively handled through elimination when compared to the cost of transport and treatment. The loan recipient must demonstrate that its tributary sewer system is not or will not be subject to excessive I/I. In order to fulfill this requirement, an I/I analysis must be performed. If the system is found to have excessive I/I, then the loan recipient must initiate and be committed to an I/I elimination program. In many cases, the locality has already done a significant amount of I/I investigation and elimination. Information on these activities often only needs to be updated with additional details provided and presented to establish the certification.

I/I Analysis

The analysis should demonstrate, within the limits of the information available, whether or not excessive I/I exists in the sewer system. Information to be obtained and evaluated in the analysis should include, to the extent appropriate:

Recent flow data at the treatment facility and/or pump stations, including significant overflows and bypasses.

Weather information for the time period corresponding to the flow data.

Flow contributions to the sewer system from industrial and commercial users.

The existing service population.

Maps of the existing sewer systems with information regarding age, length, type, materials of construction, and known physical condition of the system, as well as any information on hydrological and geological conditions along the sewer line routes.

The analysis should include an initial screening of the flow and service population data to determine the possibility of excessive I/I and whether additional evaluation is warranted. From the information gathered, the *gallons per capita per day* (gpcd) flow rate should be determined for periods of high ground water (during wet periods) and during actual precipitation events. No further I/I analysis is necessary if the flows do not exceed 125 gpcd (based on the highest 7 through 14 day average) during periods of high ground water and if the total daily flow during a precipitation event does not exceed 275 gpcd. In

these cases, the certification can be made and the facilities sized accordingly. If the screening results in flow rates exceeding these values, more detailed evaluation of the system is warranted.

The information and knowledge gathered on the sewer system (*age, materials, condition, etc.*) should be assessed in detail. All previous I/I work should be reviewed for additional information. A cost-effective analysis must then be performed to determine the quantity of excessive I/I.

For the cost-effective analysis, two types of costs should be developed:

Costs for correction of I/I conditions.

Costs for transportation and treatment of the additional water resulting from I/I.

Cost information for correcting I/I can usually be obtained from sewer inspection and rehabilitation companies or others recently involved in correction work.

The analysis should compare the costs of elimination versus treatment, and various combinations of both, to determine the most cost-effective overall program for the loan recipient. If it is determined that it is not cost-effective to implement an I/I correction program, the loan recipient should indicate that, and size the transport and treatment facilities to accommodate the I/I. If some correction work is determined to be cost-effective, the loan recipient should present and commit to a rehabilitation program and schedule to correct that cost-effective portion and size the facilities accordingly. The costs associated with the rehabilitation program are eligible for loan assistance.

Certification

DEQ will review the information presented by the loan recipient and may request revisions or additional information. If the I/I analysis meets the guidelines presented and supports the conclusion that the sewerage system is not or will not be subject to excessive I/I (*with associated commitment to I/I rehabilitation program*), DEQ will make the certification.

Loan Program Guidance Package

AFFIRMATIVE ACTION AND NONDISCRIMINATION PROVISIONS

MBE/WBE Fair Share Objective

The loan recipient is required to monitor and maintain records regarding the contractor's efforts to meet and fulfill our affirmative action fair share objectives. The DEQ will provide the loan recipient with its fair share objective to be included in Subpart D of the Contract Inserts prior to solicitation of bids. The loan recipient must also incorporate the attached Instruction to Bidders/Offerers: MBE/WBE Requirements of 40 CFR 33.240 in the contract specifications. Upon receipt of bids, the loan recipient shall request the apparent low bidder's documentation to support his or her efforts in the solicitation and recruitment of MBE/WBE contractors, subcontractors, and/or equipment suppliers, etc. The loan recipient must evaluate the low bidder's good faith efforts regarding MBE/WBE solicitation prior to contract award. All MBE/WBE solicitation and recruitment documentation must be submitted to DEQ along with the bid documents.

Immediately following contract award, the loan recipient shall obtain copies of the VRLF MBE/WBE utilization reporting form identifying the selection of minority and female-owned businesses to be utilized during construction of the facility. The contractor will continue to report its utilization of MBE/WBE firms to the loan recipient on a quarterly basis during the construction period. The loan recipient must compile these MBE/WBE utilization reports and submit them on a quarterly basis to DEQ at the following address:

**Construction Assistance Program
Water Division
Dept. of Environmental Quality
P. O. Box 10009
Richmond, Virginia 23240**

Contract Insert

Copies of the Contract Inserts that must be incorporated verbatim in all construction and service contracts, as applicable, are attached to this package.

Nondiscrimination Provisions

The loan recipient shall maintain records of all executed nondiscrimination (EEO compliance) certifications filed.

Loan Program Guidance Package

PRECONSTRUCTION CONFERENCE

Prior to the initiation of construction, it is suggested that the recipient hold a Preconstruction Conference. This will be the first formal meeting of those involved in construction of the project and should be attended by all parties. The conference will provide a better understanding of the roles and responsibilities during construction of the project, as well as procedures for complying with rules and regulations governing the program.

Attendees

Attendees should include the contractor, subcontractors, if known; representatives from utility and railroad companies (as appropriate); the Virginia Department of Transportation; the Department of Environmental Quality; the recipient and its engineering firm; and any other funding agency which will be involved in construction of the project. The recipient, or its engineer, is responsible for contacting all parties involved and advising them of the conference date, time and location. **The loan recipient should contact DEQ as soon as the Preconstruction Conference is scheduled so that a representative can be in attendance.** The DEQ will establish a preconstruction meeting with the loan recipient around the same time as the preconstruction conference to discuss the VRLF requirements related to the construction phase as well as DEQ's role and responsibilities during this phase.

Topics for Discussion

To ensure that the project proceeds according to schedule and the requirements contained in the contract documents are met, communication and contact points, along with the organizational affiliation, responsibilities and authority of each participant should be established.

Overall project schedules and coordination between the contractors, utility companies, railroads, and the Virginia Department of Transportation should be addressed. This would include any permits required or advance notices to be given by the contractor to those impacted for roadway or railway crossings.

Any remaining questions regarding the plans, specifications or other contract documents should be addressed during the preconstruction conference. Procedures for submittal of items such as shop drawings, change orders, and information for the Operation and Maintenance Manual should be discussed.

The procedures for the contractor to request payment, including forms, timing, methods of establishing quantities, documentation, and retainage, should be detailed.

Frequency of inspection by the regulatory agencies, as well as progress meetings between the contractor and other interested parties, must be highlighted.

The names, addresses and telephone numbers of those responsible during emergencies should be exchanged by or made available to everyone involved.

A system for handling citizen (landowner) complaints and personal property damage should be set up. This would also cover procedures for notifying landowners of needed access to a work site, disruption of services as a result of construction, and other actions which are likely to cause inconvenience.

Contractor responsibilities regarding compliance with local, state and federal laws and regulations should be covered. Access to the site and inspection of project records by the regulatory agencies (DEQ in particular) must be addressed.

Employment regulations such as affirmative action programs, nondiscrimination policies, required nonsegregated facilities for employees, and hiring practices (WBE, MBE, and persons with disabilities) must be discussed.

These topics only identify major areas which should be discussed at the preconstruction conference. Establishing a checklist is recommended to ensure that all items applicable to your project are addressed.

Follow up to Conference

Minutes or a written summary should be prepared following the meeting. Copies should be sent to all attendees, as well as involved parties who were unable to attend. The list of contacts for each party involved should also be prepared and provided to each.

Proper coordination and discussion of these, and other appropriate topics, will alleviate many problems that can delay the project and lead to increased costs.

Loan Program Guidance Package

STATE CONSTRUCTION OVERSIGHT

During the construction phase of projects funded through the Virginia Revolving Loan Fund, the Department of Environmental Quality (DEQ) will maintain off-site construction monitoring and conduct periodic on-site evaluations of construction activities. The purposes of the state oversight program are as follows:

To provide assistance to loan recipients in all aspects of loan and construction management in order to enhance management effectiveness and efficiency so the project is successfully completed.

To assess the project's compliance with applicable federal and state requirements and loan conditions.

To ensure that loan recipients maintain appropriate financial and records management systems.

To ensure that the project is constructed in substantial accordance with approved plans, specifications, and change orders.

To verify that payments are being made for work-in-place and to enhance the processing of disbursement requests.

The oversight program includes continuous off-site monitoring, interim project evaluations, administrative reviews, a final project evaluation and a final financial evaluation. The extent and frequency of monitoring will depend on the size and complexity of the project and the needs and performance of the loan recipient and its project management team.

Off-Site Monitoring

DEQ will conduct off-site (in DEQ regional and headquarters offices) monitoring through the review of evaluation reports, change orders, correspondence and review and approval of disbursement requests. Copies of these documents should be provided to DEQ, as appropriate, for this purpose. This information will provide an indication of the adequacy and progress of construction and may form the basis for establishing or adjusting the frequency of on-site monitoring activities.

Interim Project Evaluations (IPE)

Interim project evaluations are conducted periodically during the construction phase of the project. Their frequency will be determined by the size and complexity of the project, the rate of progress being achieved, and the nature and frequency of problems/issues

arising during construction. The evaluations normally occur at least once per month and include observation of construction progress, as well as review of specific areas of project management (*i.e., project files, procurement, change order management, etc.*).

Principal areas reviewed during IPE's are as follows:

- Construction/Contract Accounting and Management
- Disbursements (including Schedule)
- Change Order Management
- Construction Monitoring/Administration
- Construction Review
- Compliance with Loan Conditions

An IPE Report is prepared which includes the evaluation findings and conclusions, as well as DEQ recommendations, to assist the recipient in complying with project requirements in order to achieve a successful project.

Final Project Evaluation

DEQ will conduct a final evaluation to determine whether all program requirements and loan conditions have been satisfied, and that construction of the project was completed in substantial accordance with approved plans, specifications, and change orders. The final evaluation will be conducted after notification by the loan recipient that construction is complete and, if appropriate, will be conducted in conjunction with the Certificate to Operate Inspection referenced in the Virginia Sewerage Regulations.

The on-site construction evaluation will determine whether or not the facility is capable of functioning as designed, all equipment is operational and performing satisfactorily, and all administrative and laboratory facilities are complete and available for use.

The final project evaluation will be documented by a report that presents the findings and conclusions of the evaluation. The report may also present recommendations or conditions to be satisfied relating to completion of unfinished work, submission of additional information or documents, or other items required by the loan program.

Administrative Reviews

Administrative Reviews will also be conducted during the construction of the project. These reviews will focus on the financial and record management systems maintained by the loan recipient and will cover the following areas:

- Files and Records
- Project Implementation
- Financial Management
- Internal Controls
- Professional Services Procurement
- Small Purchase Procedures

12

Loan Program Guidance Package

SEWER USE ORDINANCE

All loan recipients will be required to develop and adopt a Sewer Use Ordinance. The Sewer Use Ordinance will provide the recipient with the legal, institutional, managerial, and financial capability to control wastewater entering its system.

Sewer Use Ordinance

A Sewer Use Ordinance is a legal document which restricts certain connections or wastes from entering the system and establishes the procedures for use of the sewer system. The ordinance, if properly enacted and enforced, will protect the investment and enhance treatment process stability and effluent quality.

The ordinance must prohibit new inflow sources (*i.e., roof leaders, cellar and yard drains, and sump pumps*) and must also address the timely removal of existing sources of inflow. It should further prohibit the introduction of toxic or hazardous wastes into the sewers in an amount or concentration which endangers public safety or physical integrity of the system, causes the treatment works to violate any of its permit limits, or precludes the use of the most cost-effective sludge management options. The ordinance may also, if the recipient determines, require connection to the system by all existing and/or new residences within a specified time period after the project is complete.

While the items above provide a framework for a Sewer Use Ordinance, the actual details must be more specific. To ensure proper care of the system, the ordinance should contain descriptions or procedures for limiting wastewater strength from nonresidential users, as well as prohibiting the dilution of flow for the sole purpose of meeting the limitations. Notification procedures in the event of accidental spills also need to be addressed by the ordinance. Specific steps to remove illegal connections and rehabilitate deficient connections should be included. Discharge reporting requirements and the rights of all parties with regard to testing and inspection should be addressed in the ordinance. The rights of the recipient, as well as the property owner, should be contained in the ordinance. Enforcement of the ordinance and subsequent penalties or legal action against those who do not comply with the provisions of the ordinance must be addressed.

A Model Sewer Use Ordinance is available and can be provided to the loan recipient by the DEQ upon request.

Adoption and Submission to Regulatory Agency

The Sewer Use Ordinance must be adopted and implemented by the loan recipient before the treatment system or subsequent improvements are placed into operation.

Again, the submission of an adopted Sewer Use Ordinance will be made a condition of the financing agreement. Under the Virginia Revolving Loan Fund, DEQ is requesting that this document be submitted for review at, approximately, the 50% completion stage of the project. **Disbursements will be held to the 95% level until this document is approved.** It is in the best interest of the recipient to prepare and submit these documents to DEQ for approval as early as possible.

For recipients with existing systems, Sewer Use Ordinance will usually exist. Under these instances, an update or modification to these documents may be all that is needed to incorporate the impacts created by the new or upgraded system or to bring them into compliance with the VRLF requirements.

Loan Program Guidance Package

PERFORMANCE CERTIFICATION

For all projects involving treatment works or pump stations, the loan recipient will be required to certify that the facility is meeting the project performance standards. This certification is to be made one year after the facility begins operation.

It is the Department of Environmental Quality's goal that all projects constructed with loan funds achieve and maintain an affirmative performance certification. Monitoring, inspection, communication, and training by and between the loan recipient, its operational staff, its engineers, DEQ and the Virginia Department of Health are essential for achieving this goal.

It is important to note that the loan recipient is responsible for complying with its VPDES permit. It must do so with or without financial aid or assistance from the state or federal government. Should problems be detected and their causes identified, the necessary corrective measures must be undertaken immediately. Any subsequent construction or corrective actions may be eligible for financing through the Virginia Revolving Loan Fund. Any financing would, of course, be subject to the availability of funds and existing priorities.

Initiation of Operation

An initiation of operation date must be recorded for all treatment plant or pump station projects receiving loan assistance through the Fund, as it begins the required one-year project performance certification period. This is the date when all major components of the project are complete, and the project begins to serve the purpose for which it was planned, designed, and built. For most projects, this date will coincide with the issuance of the Certificate to Operate or when the loan recipient actually begins operation of its facility. For some projects with long detention times (*e.g., lagoons*) or other unique design features, it may be appropriate for the date to coincide with the initiation of discharge from the facility.

It is requested that the loan recipient notify DEQ of its initiation of operation date within 30 days of its occurrence. If the loan recipient fails to notify DEQ of its initiation of operation date, then the date will be established by DEQ.

Project Performance Standards

Project performance standards are the basis against which the project is evaluated for certification. For wastewater treatment facilities, the state will focus primarily on the requirements contained in the VPDES permit for the facility, although some major design parameters may be included. For other facilities (*e.g., pump stations, sludge handling*

facilities, isolated unit processes), the standards will be based primarily on major design parameters. DEQ will work with the loan recipient and its consultants to review each project on a case-by-case basis to determine its performance standards. The standards will be set forth as part of the financing agreement.

Achieving Standards

Effective use of engineering services and establishment of an operator-training program can be the keys to achieving performance standards.

Engineering services should be retained during the project performance period, and the loan recipient should take maximum advantage of these services. The engineer should be called on to:

- "Direct" the start up of the facility.

- Periodically evaluate and monitor the operation of the unit processes and equipment that make up the treatment works.

- Assist in development of an operator training program.

- Revise the Operation and Maintenance Manual as needed to accommodate actual operating experience.

- Advise the loan recipient as to whether the project has met its performance standards and present the information supporting that conclusion.

- Develop the Corrective Action Report (CAR) for projects unable to meet the performance standards.

The level of services that are required will vary according to the complexity of the project and the expertise of the loan recipient. Since the loan recipient is ultimately responsible for the performance of its facility, it should take an active role in working with its engineers to resolve problems that arise.

The loan recipient should establish and support an operator training program early in the project. It may be beneficial to bring some operation personnel on line before completion of the project in order to familiarize them with the treatment scheme and unit/equipment operation and control prior to start-up. Operators should become familiar with the facility's Operation and Maintenance Manual and should be provided with adequate off-site and on-site training programs and materials. DEQ's Operator Training and Assistance Program should be contacted for information on training opportunities as well as for assistance in developing training programs.

Performance Certification

The loan recipient must provide a Performance Certification Report (PCR) to DEQ at the end of the performance period. The report need not be lengthy but must contain an affirmative or negative certification of project performance (based on the performance standards) and should include all information and analyses used in support of the certification. The loan recipient should be monitoring performance periodically and the PCR should be initiated within 9 months of initiation of operation. The PCR should be signed and dated on the last day of the performance period and promptly forwarded to DEQ.

For reports providing an affirmative certification, DEQ will review the PCR and will issue a statement within 30 days of receipt concurring or not concurring with the certification. For projects with a negative certification, the loan recipient must submit a Corrective Action Report (CAR) to DEQ within 30 days after the end of the performance period.

The CAR must provide an analysis of the cause(s) of the project's inability to meet the performance standards as well as a plan for correction. The report must also contain a schedule for the corrections, including a date for providing an affirmative certification. DEQ will review the CAR and accept or provide comments within 30 days of receipt. Closeout of the loan can only occur after an affirmative certification is accepted.